IN THE UNITED STATES PATENT AND TRADEMARK OFFICE BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Confirmation No. 3720

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Applicant(s):	Helen Biddiscombe	)
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Group Art Unit:	1772	)
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Examiner:	Christopher P. Bruenjes	)
		)
Title:	Polymeric Films	)
		)
Attorney Docket:	46613-00006	)
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REPLY BRIEF

This Reply Brief is filed in response to the Examiner's Answer mailed September 26, 2007. The arguments set forth in the Appeal Brief are maintained and certain arguments regarding Claims 21-27 are further discussed in this Reply Brief in view of the Examiner's elaboration of the rejections being appealed.

As stated in greater detail below, the Examiner makes assumptions or assertions that are not based on or found in the references. The thrust of the Appellant's arguments in this Reply Brief are to show how the Examiner does not give full credit to all of the teachings of the prior art relied upon to reject the claim, including that which teaches against the claimed invention and the plain language of the specification of the references. Without repeating all of the arguments made against the rejections, what the Examiner has failed to consider is that one of ordinary skill

does not just blindly combine teachings from prior art and add in additional elements contrary to the teachings of the references, much less use Appellant's application claims as a road map.

1. Summary of Claimed Subject Matter of Claims 21-27

The present invention as claimed in Claims 21-27 is directed to an in-mold labeled, blow-molded article formed from high density polyethylene having a label formed from a biaxially oriented polypropylene based voided film with a shrinkage of at least 4% in BOTH the machine and transverse directions as measured by the OPMA shrink test. As further provided in Claim 21, the film has a density of NOT MORE THAN 0.8 g/cm^3, and includes a void creating filler disposed in a polypropylene homopolymer base layer.

To obtain the desired densities, the void creating fillers are an essential part of the invention. While the present invention may include additional color pigmentation fillers, such as titanium dioxide, these are not void creating fillers as claimed in Claim 21. The function of the filler depends on the polymer matrix, and on the process whereby the film is made as the same particulate filler may act differently depending on its amount, location in the film particle size and process of forming the film. For example, chalk can only create voids in a polypropylene matrix, but not in a polyethylene matrix.

2. Argument Against Examiner's Rejection of Claims 21-27

A. Discussion of the Cited References

1. U.S. Patent 6,727,969 to Balaji et al

The polyolefin in Balaji forming the heat seal layer has a density from about 0.85 to about 0.95, or from about 0.87 to about 0.92, or from about 0.88 to about 0.91 g/cm^3. (Col. 4, Lns. 22-24). The heat-seal layer preferably does not include voids. (Col. 8, Lns. 46-47).

The core layer of Balaji may be a single layer or a multilayer structure (Col 6, Ln. 66 – Col. 7, Ln. 1). The core layer is prepared from meltable film forming polymers (Col. 7, Lns 1-15) and may include a titanium dioxide concentrate filler, which is a blend of 50% polypropylene homopolymer and 50% titanium dioxide by weight (Col. 7, Lns 45-48). An example of polypropylene copolymer for the core layer in Col. 7, Lns. 33-44 has a density of 0.890 g/cm^3 (without any added fillers). The core layer may include fillers, such as titanium dioxide concentrate in an amount of about 2-30% or 5-25% or 10-20% by weight of the core layer. Titanium dioxide concentrate is a blend of 50% polypropylene homopolymer and 50% titanium dioxide. Titanium dioxide has a density of 4.23 g/cm^3, which is much greater than the 0.890 g/cm^3 of the polypropylene copolymer cited by the Examiner. The core layer may also include ethylene vinyl acetate copolymer from about 9-25%, which has a density of 0.94 g/cm^3. To create voids, the core layer includes an amount greater than 25% by weight void initiating particles, which generally have much higher densities than 0.8 g [for example, nylon – 1.15 g/cm^3 (wikipedia.org/wiki/Nylon); high density polyethylene – 0.94 – 0.97 g/cm^3 (www.oxfordplasticsinc.com/polyethylene.htm) and other higher density inorganic fillers].

Balaji never provides the density of the core layer, including voids and fillers, much less the density of the film which includes the heat sealable layer having a density of 0.85 – 0.95 g/cm^3. (Col. 4, Lns. 22-24).

2. U.S. Patent No. 5,332,542 to Yamanaka et al

The Examiner states in the Examiner's Answer that Yamanaka is not used to supplement the density values of Balaji and therefore Appellant will not address Yamanaka in addition to the Appeal Brief.

3. U.S. Patent No. 5,078,817 to Takagaki

Takagaki is directed to a printed container for food packaging, particularly a heat-resistant printed container for food packaging which can be subjected to heat sterilization and heat cooking (Abstract) and is not an in-mold labeled container. In Takagaki, the label is added after the container is formed by winding around the side of a container body a transparent heat-shrinkable resin film having a cylindrical shape whose circumference is slightly larger than the circumference of the side of the container and further having print at the inner side of the label (Col. 1, Ln. 60 – Col. 2, Ln. 7). This is not in-mold labeled.

B. Rejection of Claims under 35 U.S.C. §103(a) as being unpatentable over Balaji in view of Yamanaka

1. There is no Disclosure, Teaching or Suggestion in Balaji, Yamanaka and Takagaki of a Film Having a Shrinkage Rate of at Least 4% in Both the Machine and Transverse Directions

Appellant first respectfully submits that the preferred film in Balaji is uniaxially oriented (Col. 8, Lns. 42-44). While Appellant admits that Balaji does state that the film may be biaxially oriented in one spot; Balaji throughout the written description states that the film is preferably uniaxially oriented (Col. 9, Lns 14-16). While Balaji does state that the labels may be stretched and oriented in single or double directions, it does not disclose, teach, or suggest shrinkage rates for BOTH the machine and transverse directions. As it is preferably uniaxially oriented, the Examiner is making an assumption that the shrinkage rates in Col. 4, Lns. 10-14 apply to both the machine and transverse directions, especially when machine direction shrinkage is typically much larger than transverse direction. As the stretch rates for the film are only given for uniaxially stretching (Col. 11, Lns 18-21) and no stretch rates are given for biaxially stretching,

contrary to the Examiner's assertions, one skilled in the art would be led to believe that the cited shrinkage rates are also only for the machine direction and not both machine and transverse directions. This is especially true since a biaxially oriented film may have a different shrinkage rate in one direction as compared to the same film that is only uniaxially oriented. It is common practice in the industry that if only one stretch or shrinkage rate is given, it refers only to the machine direction, as that machine direction generally has the highest level of stretching and shrinkage, not the transverse direction. Balaji does not disclose, teach, or suggest whether any of the given shrinkage values are in the machine direction, the transverse direction, or in both the machine and transverse directions. As the machine and transverse directions may shrink at significantly different rates, without a specific teaching that the shrinkage rate applies to both the machine and transverse directions, it would be unlikely that Balaji would be referring to the shrinkage rate in both the machine and transverse direction. Therefore, if the shrinkage rates given in Balaji actually applied to both the machine and transverse directions, it would be stated. Appellant respectfully submits that the shrinkage rates in Balaji only refer to the machine direction and not the transverse direction. Therefore, Appellant respectfully submits that Balaji does not disclose, teach, or suggest a shrinkage rate of at least 4% in both the machine direction and the transverse direction.

Appellant further submits that more support for the shrinkage values as being only in the machine direction is that the specification of Balaji specifically emphasizes that the film shall have a low shrinkage. One skilled in the art would understand that a shrinkage value of above 4% in the transverse direction would not be a low shrinkage value for the biaxially oriented film. A conventional standard biaxially oriented film has a shrinkage value of approximately 1 to 2% and at the very most 3% at 130 °C in the transverse direction.

Yamanaka does not disclose, teach or suggest shrinkage of the label, much less a shrinkage rate of at least 4% in both the machine and transverse directions. Therefore, Yamanaka does not supplement the deficiencies of Balaji.

2. References Fail To Disclose, Teach or Suggest a Film Having a Density of Less than 0.8 g/cm^3.

Appellant submits that Balaji does not disclose, teach, or suggest a density of 0.8 g/cm3 or less. Balaji does not give a density for the complete film, however it does give densities for the heat seal layer as well as the core layer. Balaji teaches that the heat seal layer has a density from about 0.85 to about 0.95, or from about 0.87 to about 0.92, or from about 0.88 to about 0.91 g/cm^3. Furthermore, Balaji teaches that the heat seal layer does not include voids (Col. 8, Lns 46-47).

The only example of a density for the material used in the core layer is a propylene copolymer having a density of 0.890 g/cc (or g/cm^3) (Col. 7, Lns. 34-44). Balaji does states that the core layer may also include ethylene vinyl acetate copolymer with a density of 940 kg/m^3 (or 0.940 g/cm^3) (Col 7, Lns. 56-65). Balaji also states that the core layer may include titanium dioxide (density of 4.23 g/cm^3) in an amount from about 2% to 30% or from about 5% to 25% or about from 10% to 20%, which would only increase the density of the core layer (Col. 7, Lns 45-55). Therefore, Balaji only teaches or suggests a core layer having a density of 0.85 g/cm^3 or greater.

The Examiner however argues that if the film were formed with large voids, the density of the film would be less than 0.8 g/cm^3. Appellant first respectfully points out that there is no teaching or suggestion of forming the film with large voids, much less any teaching of density once the voids are formed. Second, Appellant points out that the Examiner fails to even address

that the applicant is claiming the density of the whole film including heat sealable outer layer and not just the core layer, as the Examiner uses only the core layer of Balaji to state that the film of the present invention is obvious, even though the non-voided heat-seal layer of Balaji has a greater density than 0.8 g/cm^3 which would increase the overall density of the film even if the core layer was substantially below 0.8 g/cm^3 because Balaji teaches that the heat seal layer is not voided. Third, Balaji even teaches that the core layer may not be voided. Fourth, Balaji teaches the addition of fillers including titanium dioxide to the core layer, which would increase the density and thereby offset any decrease in density due to voids. Fifth, Balaji also teaches the addition of calcium carbonate to the core layer, which would increase the density of the core layer. Therefore, the Examiner is using hindsight and the applicant's claims as a road map in an attempt to find the invention in Balaji, which does not even disclose, teach or suggest a film having a density of 0.8 g/cm^3 or less. Furthermore, the Examiner has not addressed that all cited densities in Balaji are greater than 0.8 g/cm^3 and even if the core layer had large voids it also receives fillers of greater density, and that the core layer only is a portion of the film. In comparison, Claim 21 is claiming that the film has a density of 0.8g/cm^3 or less, not just one layer that may be less if the voids are made large enough and not many fillers are added. There is no teaching or suggesting in Balaji of making the voids large, or large enough to drop the density of the whole film under 0.8 g/cm^3.

Yamanaka does not supplement the deficiencies of Balaji, as Yamanaka teaches away from a density of less than 0.8 g/cm^3 by teaching a density of 0.96 g/cm^3 in the specification and also specifically claims a density of 0.88 to 0.94 g/cm^3 (see Claim 1 of Yamanaka).

In summary, Balaji only teaches a density of the core layers and the heat seal layers as being above the 0.8 g/cm^3, and there is no teaching or suggestion of a density as claimed in

Claim 21 being less than 0.8 g/cm^3. Balaji further teaches that the heat seal layer is not voided, and therefore, even if the core layer was voided, when combined with the heavier heat seal layer, it would still be above the 0.8 g/cm^3.

Takagaki does not supplement or overcome the above described deficiencies as Takagaki does not disclose, teach, or suggest a film with a density of less than 0.8 g/cm^3.

The Examiner contends it would have been obvious to one having ordinary skill in the art to add the hydrogenated hydrocarbon resins of Takagi to the base layer and the intermediate layer of Balaji to prevent deformation of the label as taught by Takagi. Appellant respectfully disagrees. "Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art" (See MPEP Section 2143.01(I)). Appellant respectfully submits that neither Takagaki, Balaji or Yamanaka contain a teaching, suggestions or motivation to combine, either explicitly or implicitly, and further, there is not such teaching, suggestion or motivation in the knowledge generally available to one of ordinary skill in the art.

Appellant has reviewed Takagi and has found no teachings of hydrogenated hydrocarbon resins. Appellant has also reviewed Takagaki having a heat shrink label and find no teaching, suggestion or motivation to combine such label with the in-mold labels of Balaji or Yamanaka.

It is well settled that the scope of the prior art available to the Examiner in maintaining an obviousness rejection is limited to "analogous art" (See, e.g., MPEP Section 2141.01(a)). Appellant submits that the Takagaki reference, directed to a shrink label that is not designed to be applied in-mold, is not analogous art to an in-mold label. One skilled in the art of labels

would not look to the teachings of Takagaki for in-mold labels, especially since the problems and design considerations as well as materials are completely different. Furthermore, as stated above, there is no deficiency or "problem" in Balaji or Yamanaka that would lead one skilled in the art to consider such a different label, especially the shrink label of Takagaki. Without a problem or efficiency in the labels disclosed in Balaji or Yamanaka, one skilled in the art would not look to Takagaki to provide a solution.

3. Conclusion

In summary, the rejection of Claims 21-25 under 35 U.S.C. §103(a) as being unpatentable over Balaji et in view of Yamanaka et al, and Claims 26-27 under 35 U.S.C. §103(a) as being unpatentable over Balaji and Yamanaka as applied to Claim 21 above, and in further view of Takagaki is improper. The rejection is improper because (1) none of the reference disclose, teach or suggest a film having a shrinkage rate of at least 4% in both the machine and transverse directions, (2) none of the references disclose, teach or suggest a film having a density of less than 0.8 g/ cm^3, and further for Claims 26-27, (3) there is no teaching, motivation or suggestion to combine the references of Balaji and Yamanaka with Takagaki, and (4) Takagaki is not analogous art to the other cited references.

Appellant believes there are no fees due for this document, however, if any fees are due, the Patent Office is authorized to charge or refund any fee deficiency or excess to Deposit Account No. 04-1061 in the name of Dickinson Wright PLLC.

Respectfully submitted,

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